

CONSUMERS AND GM FOOD LABELS: PROVIDING INFORMATION OR SOWING CONFUSION?

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Labeling policies for genetically modified (GM) foods are under intense scrutiny and development worldwide. The fact that Codex Alimentarius Commission (Codex)—the international body primarily responsible for food standards including labeling practices—has been unable to reach consensus on GM food labeling is indication enough that this has been a rather contentious issue. Consumers, on the other hand, appear to be in agreement about the need for labels, if public opinion surveys are any indication. If labels are indeed implemented, what sorts of labels would be useful and under what conditions? What do we know about consumers' use of labels and their effectiveness?

Key words: Codex Alimentarius Commission; Codex; genetically modified foods (GMFs); food labeling; mandatory; voluntary.

What Is A Label?

Codex Alimentarius, the food code established under the United Nations Food and Agriculture Organization (FAO) and the World Health Organization (WHO), provides the following definitions of label and labeling:

- *Label:* Any tag, brand, mark, pictorial or other descriptive matter, written, printed, stenciled, marked, embossed or impressed on, or attached to, a container of food (Codex, 1985 rev. 1991).
- *Labeling:* Includes any written, printed, or graphic matter that is present on the label, accompanies the food or is displayed near the food, including that for the purpose of promoting its sale or disposal (Codex, 1985 rev. 1991).

Clearly, labels can include something as simple as a symbol or seal, or something as complex as a set of ingredients (with a string of chemical information) and nutritional information. It can include health claims (positive labels) or warnings (negative labels). Typically, labeling regulations (such as, those in Canada and the United States) specify that labels be comprehensible, truthful, and not misleading or deceptive.

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Labels are generally designed to serve three main objectives: (1) to ensure adequate and accurate information relative to health, safety, and economic concerns; (2) to protect consumers and industry from fraudulent and deceptive packaging and advertising practices; and (3) to promote fair competition and product marketability.

Consumers' Use Of Labels

There are many factors that play a role in the use of labels. These include demographic factors such as gender, education, and income (Mueller, 1991), the perceived importance of nutrition, an interest in making product comparisons, concern about expiration dates, or curiosity about a product or brand in a first-time purchase (National Institute of Nutrition [NIN], 1999; Mueller, 1991). Interest in fat content information, as well as in the association between diet and cancer, are some of the specific elements in the "nutrition information" category (Neuhouser, Kristal, & Patterson, 1999).

Social factors involved in the production of food are also an incentive for the provision of labeling information. Products that respond to environmental concerns ("dolphin-free tuna") or interests in fair labor practices (coffee with the "fair trade" label) are some examples.

Under certain conditions, labels may have impacts on whether a purchase is made. For example, studies on the impacts of United States Food and Drug Administration (US FDA) regulatory changes which allowed producers to make health claims on their products, such as cereals, have provided empirical evidence showing changes on the part of both producers and consumers. In the case of producers, studies have shown a decline in production of high-fat, high-cholesterol foods; and, on the part of consumers, purchase behavior changes were noted in favor of low-fat and low-cholesterol products (Mathios, 1998). Additional sources of information on healthy diets were also available, such as through the mass media.

Around two thirds of consumers say they read labels at least occasionally (NIN, 1999; Ministry of Agriculture, Fisheries and Food [MAFF], 2000). However, some consumers have difficulty locating the information (MAFF, 2000) and understanding the information (NIN, 1999; Levy *et al.*, 2000.), while a majority find misleading information (MAFF, 2000). Examples cited in the latter area include the use of terms such as "fresh" and "natural."

As for genetically modified foods, a summary of consumer attitudes to GM food labeling showed that anywhere from 57% of consumers in the US to 82% of German consumers said they would be "less likely to buy GM-labeled products." (Phillips & Foster, 2000). Despite the fact that attitudes are notoriously poor predictors of behavior, it is likely the case that such consumer reluctance is one reason for producer reluctance to label GM foods.

There are, very few studies that have examined consumer responses to labeled GM food already on the market other than those on recombinant bovine somatotropin (rBST) milk. In this instance, despite expressed consumer preferences for milk from non rBST- treated cows, in terms of market impact, it appears that milk sales have not changed significantly with the use of rBST in the US (Aldrich & Blisard, 1998).

Labels For GM Foods

There are three simple questions which labeling initiatives are confronted with: what to label, when to label, and how to label? Each of these questions, as well as the issue of when labels can be truthful but misleading, is addressed next.

What is being Labeled?

In the case of GM foods, this is one of the most contentious questions. At the moment, most consumers and organizations pushing for labeling want the process labeled. This is regarded simply as a consumer right to information and the right to choose (Consumers International, 1998). The fact that the product has undergone genetic modification is expected to be shown on the label. This, of course, runs counter to the philosophy that it is the product that ought to be assessed rather than the process, given that the latter is considered safe. This is the philosophy that underlines the US and Canadian regulatory approach to biotechnology-derived foods.

However, the push for labeling the process—even a process that regulators consider safe—does have a precedent in irradiated foods. Food irradiation is a food technology process for which labeling has been required by US and Canadian regulatory systems as well as by Codex Alimentarius. A written statement such as “irradiated” or “treated with radiation,” and the use of an international symbol (the radura) illustrate this compliance with market demand for process labeling.

In trial sales conducted in the US, irradiated foods sold well in areas across the country and, in some cases, even better than their non-irradiated counterparts (Wood & Bruhn, 2000). A simulation was conducted in Georgia where consumers were given information about irradiated food before it was purchased. Seventy one percent purchased irradiated beef, including 62% of the consumers who originally stated they would not purchase irradiated food (Wood & Bruhn, 2000). This example suggests the possibility that, in certain instances, it is possible to meet a consumer demand for process-based information without necessarily resulting in adverse effects for the producer.

In addition to process labeling, there is also the question of what products or product ingredients to label. Would labeling be applied to all food products or only certain food categories? Only major ingredients or including minor ingredients? Under the broadest umbrella, labeling could become meaningless since the base ingredients found in most processed foods—soy, corn, cheese—have undergone genetic modification.

When would Labeling be Required?

The question of what percent of the product has to be GM in order for it to be labeled has resulted in a variety of “threshold” requirements: one percent in the European Union (EU), five percent in Japan. With lower thresholds, the bar for testing capabilities and for segregation standards becomes higher. At the same time, confidence in the truthfulness of labels rests on these standards and their verifiability.

How should GM Food be Labeled?

An important issue in whether labels are ultimately effective concerns the type of information that ought to be conveyed to consumers. There are differences in the degree of certainty about whether the finished product contains the modified protein, as illustrated by use of the phrases “may contain,” “contains,” or “does not contain.” A series of focus groups conducted by Canada’s National Institute

of Nutrition found that consumer participants were not supportive of the use of the phrase “may contain,” arguing that this conveyed the image of a producer who did not know enough about the product he was selling or that there may be some kind of “mix-up” involved (NIN, 1999).

Is it Possible for a Label to be Truthful and Still Mislead?

It is certainly possible for labels of GM and non-GM foods to be truthful but misleading. In the case of non-GM foods, it is conceivable for a product to be advertised as “GM-free” but if no genetic modification had been conducted on that product class, then this would be misleading. A brand of apples touted as being “GM-free” would be an example as of such misleading information; genetic modification has not been applied commercially to apples yet. To avoid this problem, a labeling standard would specify that this claim could not be made if genetic modification had never been applied to that product category to begin with.

In the case of rBST milk, in order to avoid the impression that milk from cows treated with rBST was unsafe, the US FDA required producers to add a statement indicating that “The federal government has determined that rBST/rBGH milk is safe for humans and cows, and that no significant difference has been shown between milk from rBST/rBGH-treated or non-rBST/rBGH treated cows” (Greene, 1994; Powell & Leiss, 1997).

Concluding Comments

All of these issues make the task of putting together a labeling program for consumers an extremely demanding—but not impossible—task. There are certain requisite supports for a labeling program to work. First is a set of standards that provide producers and distributors with clear and well-defined information on what, when, and how to label should be implemented. Second, a consumer education program should accompany the introduction of a labeling program. Product leaflets, other point-of-purchase information, 800-numbers, and contact addresses on the product are useful ways of complementing the label information. Third, there should be a framework for compliance, even for a voluntary labeling regime. An assurance that labeling information is truthful and not misleading is only as meaningful as the ability to enforce such a requirement.

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